. R E P O R T R E S U M E S

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PROGRAMED INSTRUCTION IN ADULT EDUCATION. CURRENT INFORMATION SOURCES, 15.

SYRACUSE UNIV., N.Y., ERIC CLEARINGHOUSE ON ADULT

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DESCRIPTORS- *PROGRAMED INSTRUCTION, *TEACHING TECHNIQUES, *ADULT LEARNING, *ANNOTATED BIBLIOGRAPHIES, *EVALUATION, COMPUTER ASSISTED INSTRUCTION, TEACHING MACHINES, PAIRED ASSOCIATE LEARNING, INSTRUCTIONAL TECHNOLOGY, MILITARY TRAINING, LEARNING PROCESSES, TESTING, ADULT EDUCATION, RESEARCH,

THIS ANNOTATED BIBLIOGRAPHY CONTAINS 39 INDEXED AND ABSTRACTED ENTRIES ON PROGRAMED INSTRUCTION IN ADULT EDUCATION, INCLUDING RESEARCH AND EVALUATION STUDIES, TESTING, PROGRAMS, TEXTBOOKS, AND BIBLIOGRAPHIES. THE DOCUMENTS PROCESSED, WITH FEW EXCEPTIONS, ARE ALL DATED 1966 OR 1967. (SG)

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ERIC CLEARINGHOUSE ON ADULT EDUCATION

PROGRAMED INSTRUCTION IN ADULT EDUCATION

Current Information Sources, CIS-15

February, 1968

AC 001 920

ERIC CLEARINGHOUSE ON ADULT EDUCATION

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PROGRAMED INSTRUCTION IN ADULT EDUCATION / Current Information Sources - 15

ABSTRACT

AC 001 920 E PROGRAMED INSTRUCTION IN ADULT EDUCATION (Current Information Sources, 15). ERIC Clearinghouse on Adult Education, Syracuse, N.Y. FEB 68
EDRS PRICE MF-$0.25 HC-$1.00 25p.
TERMS: *programed instruction, *teaching techniques, *adult learning, *annotated bibliographies, *evaluation, computer assisted

ABSTRACT: This annotated bibliography contains 39 indexed and abstracted entries on programed instruction in adult education, including research and evaluation studies, testing, programs, textbooks, and bibliographies. The documents processed, with few exceptions, are all dated 1966 or 1967.. (sg)
SECONDARY TERMS: instruction, teaching machines, paired associate learning, instructional technology, military training, learning processes, testing, adult education, research,

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AC 001 177FI DEVELOPMENT AND EXPERIMENTAL EVALUATION OF AN AUTOMATED MULTI-MEDIA COURSE ON TRANSISTORS. Whitted, J.H. * and others. Aerospace Medical Res. Laboratories. Wright-Patterson AFB, Ohio. AMRL-TR-66-142. RCA Service Company, Camden, N.J. AF-33(615)-2880. Sep 66 114p.

TERMS: *electronics, *autoinstructional methods, *program development, *evaluation, *independent study, audiovisual programs, audiovisual instruction, audiovisual aids, classes (groups of students), lecture, theories, course content, testing, test results, pretests, post testing, research methodology, electronic equipment, statistical data, research,

ABSTRACT: A study was made of the feasibility of developing a fully automated self-study program for teaching electronic solid state fundamentals and to assess through a controlled experiment the relative effectiveness of the automated course compared to the conventional instructor/classroom presentation and self study materials from the Air Force Extension Institute. Media for the automated course included tape slide audiovisual presentations, programed text, cued text, sound movie, workbook, and an RCA transistor trainer. Although the classroom subjects received somewhat higher ratio gain scores on the average than the multimedia subjects, this difference was not significant. Both of these modes proved more effective than the extension course materials. Principal measures of effectiveness were a pretest and a posttest made up of multiple-choice items relating to the solid state theory covered. Findings suggest the need for practical, reliable, flexible media and methods, a high degree of student participation, positive reinforcement, and opportunity for review. (This document, AD 646 671, is available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151. Microfiche 65¢. Hardcopy $3.00) (author/ly)

AC 001 408JI PROGRAMMED INSTRUCTION IN THE AEROSPACE INDUSTRY, SURVEY RESULTS FROM 42 FIRMS. (In TRAINING AND DEVELOPMENT JOURNAL 21(10)/29-32, Oct 1967). Cather, Harry E. Oct 67 4p.

TERMS: *programed instruction, *aerospace technology, *industry, *training techniques, *industrial training, motivation, surveys, programed texts, programing, evaluation,

ABSTRACT: Programed instruction is being used for basic training and refresher courses in the aerospace industry, usually in the form of programed texts, which are cheaper than machines. A questionnaire was sent to 70 leaders of training staffs in the aerospace industry. Of the 42 firms responding, 67 percent were using programed instruction, nine percent planned to begin programed courses, and 24 percent did not plan to use it. Much of the programing was done within the company, but only a small amount by the training staffs themselves. Programed instruction was found not to be the panacea of training and no replacement for the instructor. It did not supply motivation but could be a useful training asset when properly administered and controlled. Teaching instructors the method and principles of programed instruction improved their teaching. A survey of a broader scope of industries is needed to determine other training areas where programed instruction can be successful. (The survey questions and tabulated responses are included.)(aj)

AC 001 255 I TEACHING PAIRED ASSOCIATES, THE PROBLEM OF AGE (IN Occupational psychology, 40/67-74, 1966). Belbin, Eunice * Downs, Sylvia. Univ. College, London, England, Res Unit into Problems of Indust. Retraining. 66 8p.

TERMS: *paired associate learning, *teaching methods, *sorting procedure, *adult learning, *age differences, educational research, deduction, programed instruction, educational experiments, young adults,

ABSTRACT: To determine the best method of teaching a paired associates task (manual postal sorting) to young adults (20-34) and mature adults (35-49), within a time limit, unskilled and semiskilled volunteers used four methods of learning--linear programing, list (memorizing), activity (learning by doing) and deduction (activity and linear program). The effectiveness of each method was tested by an activity or written test. It was found that younger persons had superior test results in list, programed, and activity learning. When deduction was introduced, older subjects had scores comparable to the younger. (pt)

AC 000 716 C (SEE AC 000 715 C) PROGRAMED TECHNIQUES AND THEIR USE IN APPRENTICE TRAINING (IN Aspects of Educational Technology, Proceedings of the programed Learning Conference, Loughborough, England, Apr 15-18, 1966/135-149). Jeffels, A. 67 17p.

TERMS: *programed instruction, *teaching techniques, *apprenticeships, *programs, *evaluation, Great Britain,

ABSTRACT: This paper, based on the experience and results obtained from a controlled experiement using programed learning techniques, describes a system developed to train engineering apprentices in the theory and practice of basic engineering skills.

AC 001 057 JC USE OF PROGRAMED INSTRUCTION FOR ORIENTING NEW EMPLOYEES TO COMPANY BENEFITS (In Personnel Journal, 46(6)/344347, Jun 67). Neidt, Charles O. * Sears, Eugene. 6p. tables. bibliog., p. 347

TERMS *programed instruction *orientation materials, *personnel, *evaluation,

ABSTRACT: The effectiveness of familiarizing new employees with company benefits by programed instruction, as compared to the conventional lecture-reading-discussion method, was tested at six regional offices of the State Farm Insurance Company. (Abstract filed)

AC 000 643 I EFFECTIVENESS OF PROGRAMMED INSTRUCTIONAL MATERIALS DESIGNED TO INTEGRATE LOWER-LEVEL SUPPORTING BEHAVIORS INTO HIGHER-LEVEL BEHAVIORS IN A LEARNING PROGRAM FOR COMPUTER FLOW CHART DESIGN. Ford, John D. Jr. * Meyer, John K. U.S. Naval Personnel Res. Activity, San Diego, Calif. PF017030210 Technical Bulletin STB 66-24. FEB 66 40p. illus.

TERMS: *program evaluation, *programed instruction, *programing, *task performance, research, evaluation, skills, control groups,

ABSTRACT: This study sought to evaluate a preliminary version of a learning program designed to teach computer flow charting. Gagne's method was applied to designing computer flow charts. Supporting behaviors needed to perform the criterion task were identified, the behaviors needed to perform the supporting behaviors were then identified, and so on. It proved impossible to obtain a complete hierarchical structure for the task. Instructional materials were developed for a control program. Integrative materials were added to these for the experimental program. Each of 10 male undergraduate college students spent 15 hours on a program. Trainee flow charts were rated on the skills 1) symbolic representation, 2) configural design, and 3) conceptual formulation. Ratings showed no differences related to which program was taken, although the experimental group progressed faster through the program. Mathematics aptitude and procedural behaviors had an effect on achievement as measured by skill ratings. It is thought that some parts of the program may use the hierarchical concept of learning. (author/ja)

SECONDARY TERMS: aptitude, instructional materials, behavior patterns, job analysis, flow charting, Gagne,

AC 000 722 C A COMPARISON OF THE EFFECTIVENESS OF BOOK AND AUDIOVISUAL PRESENTATION OF TWO PROGRAMS (IN ASPECTS OF EDUCATIONAL TECHNOLOGY, Proceedings of the Programed Learning Conference, Loughborough, England, Apr 15-18, 1966, pp.469-479). Davison, M.C. * and others. 67 13p.

TERMS: *programed instruction, *teaching techniques, *programed texts, *audiovisual aids, *evaluation, test results,achievement gains, research, adult students, participant characteristics, statistical data,

ABSTRACT: The aim of this experiment was to investigate whether the audio presentation of programs might not be as effective as the more conventional visual presentation. A simple audio teaching machine was constructed which allowed for self-pacing by automatically stopping at the end of each frame and restarting when the student pressed a button.Two linear programs were put in audio form--1) "Factors" by F.H. George (95 frames) for children aged 10-12, and 2) "How to read a work ticket" (130 frames) for adults at Clarks Ltd, Street. Compared to results using books it was found that the audio-visual programs took significantly longer, but resulted in a significantly higher gain in the "Factors" program and a significantly lower error rate in the Clarks program. No other significant differences between means were found. For various reasons this was regarded as encouraging to the idea of audio programming. (author)

AC 000 617 C ORIENTING THE NEW EMPLOYEE WITH PROGRAMMED INSTRUCTION, RESULTS OF A TEST AT UNION ELECTRIC, ST. LOUIS (IN Training and development journal, 2(5)/18-22, May 67). McClintock, Marion * and others. May 67 5p.

TERMS: *programed instruction, *orientation materials, *evaluation, *time factors (learning), *program costs,

ABSTRACT: A comparison was made of conventional orientation training for new employees with a programed orientation. The programed instruction was found superior both in the quality of instruction and in the amount of teacher time and pupil time expended. Also the printing cost of programed orientation was lower. (sm)

AC 001 623 E COMPARISON OF CONVENTIONAL AND PROGRAMED INSTRUCTION IN TEACHING COMMUNICATIONS PROCEDURES. Johnson, Kirk A. * and others. U.S. Naval Personnel Research Activity, San Diego, Calif. NPRA-STB-67-20 Proj-PFO17034001 MAY 67 DOCUMENT NOT AVAILABLE FROM EDRS 22p.

TERMS: *military training, *programed instruction, *communications, *lecture, *discussion (teaching technique), training techniques,

ABSTRACT: In this study, the third in a series evaluating programed and conventional instruction in the schools of the Naval Air Technical Training Command, a comparison was made between two versions of the Airborne Radio Code Operator (ARCO) course. In the conventional version, military communications procedures were taught by means of lecture discussion sessions. In the other version, this same material was taught by means of programed booklets. The students in the program version required a total of 14.5 hours to cover the material, as opposed to a total of 30 hours for the lecture discussion sessions. This afforded a savings of better than 50 percent over this particular part of the course and a savings of two days in the total length of the course. Mastery of the materials was measured by two special tests. On the multiple choice test, the conventional group was found to be slightly better than the program group. On the short answer test, the program group was found to be slightly better than the conventional group. The difference favoring the program group was somewhat larger than that favoring the other group. (The document includes seven tables) (This document, AD-656-894, is available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151. Microfiche 65¢. Hardcopy $3.00) (author/ly)

SECONDARY TERMS: radio technology, programed texts, military personnel, time factors (learning), academic achievement, performance factors, test results, tests, statistical data, effective teaching, U.S. Navy,

AC 001 541 E PSYCHOLOGICAL RESEARCH IN CLASSROOM LEARNING (Report on a conference at the Bromwoods Residential Center, Washington University, St. Louis, Mo.). Wientge, King M., ed. * and others. Washington Univ., St. Louis, Mo. School of Continuing Educ. R-Pub-11 67 OEC-3-7-061134-1532 EDRS PRICE MF-$0.50 HC-$5.04 126p.

TERMS: *adult learning, *educational psychology, *classroom environment, *instructional technology, *evaluation, research, higher

ABSTRACT: Papers were presented at a conference on classroom learning on such topics as program design, testing and other evaluation techniques, computer assisted instruction, programed instruction, simulation, pacing, and retention. Several treated military training, adult learning, and adult-centered classroom techniques. In one paper, the systems approach to adult learning was predicated on the application of engineering logic in formulating objectives, identifying and allocating functions, and planning for operation of the system and system testing. Another study compared the performance of Navy trainees in radar and radar navigation technology as measured at four points in the training sequence. One retention study compared programed and conventional instruction in a Navy technical course. Attitudes of instructors, training administrators, and Navy and Marine enlisted men toward programed instruction were surveyed at eight aviation technical training schools. A study of elective participation is currently being made. (The document includes tables, diagrams, and a background paper.) (These papers were presented at a conference held at the Bromwood Residential Center, Washington University, St. Louis, Missouri) (ly)

SECONDARY TERMS: education, military training, flight training, aerospace technology, classroom techniques, classroom participation, simulation, pacing, systems approach, testing, measurement instruments, units of study (subject fields), retention, statistical

(over)

AC 001 565 E COMPUTER ADMINISTERED INSTRUCTION VERSUS TRADITIONALLY ADMINISTERED INSTRUCTION, ECONOMICS. Kopstein, Felix F. * Seidel, Robert J. George Washington Univ., Washington, D.C. HumRRO. RPP-31-67 DA-44-188-ARO-2 JUN 67 DOCUMENT NOT AVAILABLE FROM EDRS 43p.

TERMS: *computer assisted instruction, *classroom techniques, *student costs, *effective teaching, military training, programed

ABSTRACT: An attempt is made to assess the economics of computer assisted instruction (CAI) versus traditionally administered instruction (TAI) in controlling the structure of the learner's stimulus environment in teaching and training situations. There is a discussion of the need for a sound, objective economic appraisal of the value to society of increments in the breadth and depth of education in the population, and of the influence of varying rates at which these increments are brought about. The necessity for reliable, objective information concerning cost data is emphasized. Projected comparisons of cost and effectiveness based on the assumption of equal effectiveness for CAI and TAI are discussed for civilian and military instruction. In particular, the five studies of military technical training stress costs per student hour, and illustrate the problem of obtaining accurate cost figures for military instructional expenditures. (Also included are five figures, eight tables, and 21 references.) (This document, AD-656-613, is available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151. Microfiche 65¢. Hard copy $3.00) (author/ly)

SECONDARY TERMS: instruction, program costs, evaluation, research, public schools, higher education, school personnel, salaries, electronic equipment, programing, estimated costs, program administration, statistical data, comparative analysis, economics,

AC 001 608JE EVALUATING PROGRAMMED INSTRUCTIONAL TECHNIQUES (In CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH, 18(1)/49-59, Jan 67). Hampton, John D. DOCUMENT NOT AVAILABLE FROM EDRS 11p.

TERMS: *programed texts, *retention, *textbooks, *evaluation, *achievement, programed instruction, testing, research,

ABSTRACT: A linear and a branching programed textbook were compared for effectiveness with each other and with a conventional textbook. Six groups of 82 airmen each studied educational principles under the three formats. Student achievement in learning was measured by both multiple-choice and constructed-response tests. Immediate achievement was measured by a posttest given upon completion of the learning task. Analysis of variance of the posttest scores revealed the following--both programed textbooks produced significantly superior achievement and retention over the conventional textbook, but neither program proved superior to the other as measured by the two modes of testing. Results suggest that an evaluation of programed learning techniques must consider the variables of tests, statistical analysis, and the meaning of terms. (The document includes charts and tables.) (This article appeared in the CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH, Volume 18, Number 1, January 1967, published by the California Teachers' Association, 1705 Murchison Drive, Burlingame, California) (author/ly)

SECONDARY TERMS: experimental groups, response mode, linear programing, branching, test results, tests, achievement tests, analysis of variance, student ability, statistical data,

AC 001 625 E EXPERIMENTAL EXPLORATIONS IN PROGRAMMED INSTRUCTION AND OBJECTIVE TESTING MEASURES. Paper 2. Report of the "Variables Influencing Behavior" Project. Berman, Mark L. Arizona State Univ., Tempe. Dept. of Psychology. AUG 66 EDRS PRICE MF-$0.25 HC-$1.88 47p.

TERMS: *evaluation, *intelligence tests, *reinforcement, *timed tests, *reading tests, measurement instruments, testing, research,

ABSTRACT: As one phase of research in applied anthropology, Yaqui Indian and Mexican men in Arizona have participated for three years in experimental programed courses in basic English and arithmetic. The students had previously had an average of five years' formal schooling. A battery of standard objective tests was given to measure IQ and ability to read and comprehend English. A first series of tests was administered with specified time limits observed. A second series was given also with the time limits. Then students were allowed to complete the tests. The concession of time to work to completion changed IQ percentile ranks from 11 or 12 to 66, 77.5 and 63. Various tests of reading, vocabulary, and other skills yielded highly inconsistent evaluations of the students' abilities. A third series of tests was based on a novel experimental approach to programed learning. An adjusting schedule of reinforcement for meeting time and error criteria was put in force. This involved raising or lowering requirements for reinforcement using the student's own performance as a measure. Results indicated that both speed and accuracy can be controlled by reinforcement contingencies. (Also included are six references and 32 tables.) (author)

SECONDARY TERMS: experimental groups, participant characteristics, minority groups, English (second language), objective tests, test results, programed texts, analysis of variance, educational background, educational disadvantagement, Mexican Americans, American Indians,

AC 000 578 C DIFFERENTALLY STRUCTURED INTRODUCTORY LEARNING MATERIALS AND LEARNING TASKS, A RESEARCH PROPOSAL. Grotelueschen, Arden. Nebrasks Univ. , Lincoln. 18p.

TERMS: *learning theory, *teaching technique, *research proposals, age differences, learning characteristics,programed instruction, teaching machines, directed learning, research methodology, mathmeatics instruction, paired associate learning.

ABSTRACT: Research is proposed to study effects of directed learning in paired associate tasks in mathematics. Introductory material will be divided into 4 groups and teaching machines will present the learning task in 3 different organizations. The population will be divided into below and above median intelligence groups as determined by the WAIS Total Scaled Score, The introduction notes previous research on the effectiveness of organization of introductory material and insturctional conditions prior to learning situations.

AC 000 615 E
ED 012 408

A NOTE OF CAUTION ON LISTENING TRAINING, STUDY SHOWS POSSIBLE FALSE IMPRESSIONS AND OVER-EVALUATION (IN Training and development journal, 21(5)/23-28, May 67). Crawford, Harold E. MAY 67 DOCUMENT NOT AVAILABLE FROM EDRS. 6p.

TERMS: *listening skills, *communication skills, *program evaluation, *training techniques, industrial training auditory training,

ABSTRACT: Honeywell used an audio-programed course in listening skills, consisting of a series of taped statements of varying lengths and complexity, with considerable noise, and the trainee made a written or oral response. It took 2 and 1/2 to 3 hours to complete plus an additional half hour for pre- and post-testing. The first group showed two-fold to three-fold increase in average scores. With another group of employees, the pre- and post-tests were reversed, and it was found that the average score at the end of the program was lower than at the beginning. It was concluded that the post-test was easier than the pre-test. Two persons at Honeywell took the pre-test and immediately the post-test (with no training) and showed better than a two-fold increase. A comparison of the tests showed that there were different numerical point values for correct responses. There was greater mathematical probability that the trainee would score better on the post-test. Adverse consequences of this include false impressions of amount of learning and an over evaluation of the course. Some improvement was achieved by the training but caution is urged in selecting training programs for listening skills. (This article appeared in Training and development journal, monthly journal of the American Society for Training and Development, 313 Price Place, P.O. Box 5307, Madison, Wis. 53705) (eb)

SECONDARY TERMS: programed texts, post testing, test results, response mode, test validity, research,

AC 001 520 E

TRAINING TYPISTS IN THE INDUSTRIAL ENVIRONMENT, PRELIMINARY REPORT OF A PROTOTYPE SYSTEM OF SIMULTANEOUS, MULTILEVEL, MULTIPHASIC AUDIO PROGRAMMING. Adams, Charles F. National Association of Manufacturers, New York. MIND Monograph, 1 MAY 66 DOCUMENT NOT AVAILABLE FROM EDRS 22p.

TERMS: *typewriting, *job skills, *audio equipment, *educational radio, *job training, office occupations, pilot projects, program content,

ABSTRACT: In 1965 ten Negro and Puerto Rican girls began clerical training in the National Association of Manufacturers (NAM) Typing Laboratory I (TEELAB-I), a pilot project to develop a system of training typists within the industrial environment. The initial system, an adaptation of Gregg audio materials to a machine technology, taught accuracy, speed building, job simulation, filing, spelling, and production work. TEELAB-I took the novice to over 40 words per minute in eight weeks and could be administered by any typist. Based on a ten-student class, the cost per trainee was $8.00 per week for leasing the equipment, typewriter rental, books, supplies, and administration time. In 1966, a tape-based system with a four- channel simultaneous playback of typing instruction on four skill levels was designed for use in TEELABS II and III, capable of FM radio broadcasts in which simultaneous four-channel transmissions could be made on sub-carriers while the station carried its regular program schedule. Such techniques could lead to cost reductions by making training available to large numbers of trainees. (This document is available from the National Association of Manufacturers, 277 Park Avenue, New York City 10017) (aj)

SECONDARY TERMS: Negro students, Puerto Ricans, student costs, time factors (learning), educational disadvantagement, clerical occupations, National Association of Manufacturers,

AC 000 718 C (SEE AC 000 715 C) PROGRAMED INSTRUCTION IN THE ROYAL NAVAL ELECTRICAL SCHOOL (IN Aspects of Educational Technology, Proceedings of the Programed Learning Conference, Loughborough, England, Apr 15-18, 1966, pp. 167-179). Stavert, G.S. 67 15p.

TERMS: *programed instruction, *electricity, *military training, *evaluation, Great Britain,

ABSTRACT: This paper outlines the way in which programed instruction is fitted in with conventional classroom instruction and practical laboratory work in an integrated training scheme in the Royal Naval Electrical School. The role of the live instructor is emphasized. The benefits, and also possible disadvantages, of the scheme are suggested.

AC 001 552 E PROGRAMMED INSTRUCTION IN THE BRITISH ARMED FORCES, A REPORT ON RESEARCH AND DEVELOPMENT. Wallis, D. * and others. British Ministry of Defence, London (England). 67 DOCUMENT NOT AVAILABLE FROM EDRS 53p.

TERMS: *military training, *programed instruction, *computer assisted instruction, *teaching machines, *instructional technology,

ABSTRACT: The British armed services have applied programing in scholastic subjects. A marked improvement in the technology of training has resulted in the development of a more systematic derivation of training objectives, closer assessment of knowledge and ability of potential students, and more accurate specification of contents, methods, and materials for training efficiency in terms of performance standards and cost effectiveness. Adaptive teaching machine systems are successful in instruction of keyboard and radar skills, fault finding and general comprehension, while computer-based instruction systems are utilized in acquisition of knowledge. Widespread use of programing would improve training by reducing demands on instructors and instruction time, increasing knowledge and proficiency, and the number of trained personnel. Future military research must deal with such problems as--developing new programing styles and devices and more suitable criteria for judging program effectiveness, and evaluating the role of the instructor. (The document includes a fold-out table of classification of training areas and instructional methods) (This document is available from Her Majesty's Stationery Office, London (England) (pt)

SECONDARY TERMS: research problems, instructional improvement, research methodology, research needs, program descriptions, job skills, criteria, evaluation, statistical data, research, sequential learning, military personnel, psychomotor skills, Great Britain,

AC 001 685 E COMPARISON OF CONVENTIONAL AND PROGRAMED INSTRUCTION IN TEACHING AVIONICS FUNDAMENTALS. Longo, Alexander A. * Mayo, G. Douglas. U.S.Naval Personnel Research Activity, San Diego, Calif. STB-66-16 PF01703040l DEC 65
EDRS PRICE MF-$0.25 HC-$1.60 40p.

TERMS: *programed instruction, *conventional instruction, *military training, *electronics, *time factors (learning), evaluation,

ABSTRACT: This study, part of a series involving a variety of course content and training conditions, compared programed instruction with conventional instruction to gain information about the general utility of programed methods. The performance of 200 Navy trainees taking 26 hours of conventional instruction in electrical calculations, direct current circuits, and direct current meters was compared with that of 200 trainees taking 19 hours of programed instruction on the same content. Results indicated the following--(1) the basic electronics students learned a relatively large block of programed material to about the same degree but in much less time than was required by conventional instruction--(2) the constructed response examination, prepared for programed instruction purposes, was satisfactorily reliable--(3) the conventional and programed instruction groups did not differ significantly in performance--(4) the "90/90 performance level" of programed material decreased as a function of the amount of material tested at a given time. (The document includes two references, tables and appendixes, and a distribution list.) (author/ly)

SECONDARY TERMS: experimental groups, enlisted men, performance, testing, test results, training objectives, programed texts, analysis of variance, statistical data, constructed response, multiple choice tests, U.S. Navy,

AC 000 419 C PROGRAMMED INSTRUCTION IN MEDICAL EDUCATION (Proceedings of the first Rochester conference, Jun 25-27, 1964). Lysaught, Jerome P., ed. * and others. Rochester Univ., Rochester, N.Y. Rochester Clearinghouse for Information on Self-Instruction in Medical Education. Pfizer Laboratories, sponsor. 65 240p.

TERMS: *medical continuing education, *programmed instruction, problem solving, systems analysis, sceince education, information theory, *research, evaluation, testing, bibliographies,

ABSTRACT: These papers summarize five years' exploration and research on programmed instruction in medical education and include discussions of theoretical and practical aspects of program development and construction, and philosophical connsiderations of the impact on medical education of the extension of self-instruction. There is a bibliography.

AC 001 180 FI THE APPLICATION OF PROGRAMED INSTRUCTION TO FOREIGN LANGUAGE AND LITERACY TRAINING. Rocklyn, Eugene H. Paper 8-67. DA44-188-ARO-2. George Washington Univ. Washington. HumRRO Feb 67 13p.

TERMS: *programed instruction, *literacy education, *evaluation, *audio equipment, *second language learning, training techniques, military personnel, tape recordings,

ABSTRACT: As shown in the programs described, the advantages of programed foreign language instruction for military personnel lies in eliminating or relieving the need for native or highly trained instructors, and in providing needed practice through repeated opportunities to respond in a favorable learning environment. The first course, designed to help troops gather low level tactical information, used recorder equipment, taped course material, scoring equipment, and printed course material. The programed course in Vietnamese (largely composed of queries for information, social amenities, advising terms, instructions, and commands) employed a dual-track student tape recorder, earphones, and a student microphone. These programs led to clearly increased proficiency even among relatively less able students. In programed literacy education, (a comparatively undeveloped area) the Progressive Choice Reading Method and the Diebold Group system, both of which combine programed instruction with tutorial instruction, have also shown considerable promise. (The document includes 4 references, and a description of the National Clearinghouse for Self-instructional Language Materials.) (This document, AD 647841, is available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151 Microfiche 65¢ Hardcopy $3.00) (1y)

AC 001 179FI MILITARY APPLICATIONS OF PROGRAMED INSTRUCTION AND MANAGEMENT CONSIDERATIONS IN PROGRAMED INSTRUCTION Smith, Robert G., Jr. George Washington Univ. Washington HumRRO. RPP-7-67. U.S. Dept. of the Army. AD-647-840. Feb 67 17p.

TERMS: *programed instruction, *military training, *programing, *teaching techniques, *course organization, evaluation,

ABSTRACT: The first of these two papers presented at a 1965 NATO Conference on "The Military Applications of Programmed Instruction" arranged by the advisory Group on Human Factors describes the influence of military applications of programed instruction on the development of modern concepts of programing and specific applications that might suggest ways in which programed instruction could be used. A review of the use of programed instruction in the armed forces includes discussion of the 90-90 quality standard. The second paper answers questions training officers considering the use of programed instruction are likely to ask-- 1)what gains can be expected from programed instruction, 2)under what conditions should it be used, 3)where can programs be obtained, 4)what problems are associated with getting programs, and 5)how to develop a programing capability in an organization. (aj)

AC 001 176FI AUTOMATION OF A PORTION OF NCC LEADERSHIP PREPARATION TRAINING. Showel, Morris * and others. George Washington Univ., Washington. HumRRO. TR-66-21 U.S. Dept. of the Army. Office of Research and Development. 2J024701A712 01. DA-44-188-ARO-2 Dec 66 42p.

TERMS: *leadership training, *autoinstructional methods, *learning processes, *military training, *evaluation, learning, criteria, audiovisual aids, audio equipment, tape recorders, visual learning, flexible scheduling, research, retention, effective teaching, programed texts,

ABSTRACT: A method of presenting roughly one-seventh of the Army's two-week Leader Preparation Course (LPC) through automated instruction was developed. The automated instruction method included the use of tape-recorded lectures, supported by visual aid frames, and programed workbooks. Automated presentation proved to be at least as effective as conventional instruction in imparting the leadership knowledge covered by automation. In addition, those students who learnedthrough the automated method appeared to retain their knowledge better than the conventionally-trained students. The automated method also exhibited practicality in reduction of instructor requirements, flexibility of scheduling, and consistency of level of presentation. The automated program was adopted for use at Army Training Centers presenting the LPC. (author)

AC 000 540 I THE INFLUENCE OF PRACTICE FRAMES AND VERBAL ABILITY ON PROGRAMED INSTRUCTION PERFORMANCE. Melching, William H. *Nelson, Frank B. George Washington Univ., Washington, HumRRO. TR-66-1 U.S. Dept. of the Army, Washington. DA-Proj-2J024701A712 JAN 66 DA-44-188-ARO-2 24p. illus.

TERMS: *programed instruction, *verbal ability, *evaluation, practice frames, enlisted men, achievement tests, time factors,

ABSTRACT: A program in counter_insurgency was analyzed into teaching and practice frames and 2 program versions prepared, 1 containing both teaching and practice frames, and 1 containing only teaching frames. These were administered to 32 enlisted men representing 2 levels of verbal ability. On completing the program, each subject was administered 3 types of achievement test. Learning time and number or errors were obtained. The presence of practice frames was found to be influential only on a written recall type of test, where they enabled subjects to proceed through the program at a faster rate per frame, make fewer program errors, and score higher. Practice frames increased the total program learning time. Verbal ability was found to have a significant effect on performance on each type of achievement test and on both measures of performance. (ja)
SECONDARY TERMS: (learning), program development, accuracy, research, performance, teaching frames, army training,

AC 001 472JC A CLASS FULL OF COURSES, AN UNUSUAL EXPERIMENT IN PROGRAMED TEACHING (IN Audiovisual instruction 11(4)/251-253, Apr 1966). Van Phelan, Louis. Apr 66 3p.

TERMS: *programed instruction, *individualized programs, *experimental teaching, *adult education programs,

ABSTRACT: At University Adult High School in Los Angeles an experimental system of programed instruction allowed adult students to study a number of allied subjects in a single classroom under the guidance of one teacher.

AC 000 437JC TRENDS IN PROGRAMMED INSTRUCTION DURING 1965-66 IN MILITARY TRAINING IN THE NATO NATIONS (IN NSPI journal, 6(4)/17-20, Apr 67). Nagay, John A. 6p.

TERMS: *educational trends, *military training, *programed instruction, Europe,

ABSTRACT: About one-third of the NATO member nations have no current research and development efforts in programed instruction, those of another third are growing, and the programs of the Dutch, Canadians, English, and Americans are substantial. The people originally interested in the learning-theoretic implications of programed instruction have become less active. Current research emphasizes programing variables and is directed toward the formulation of a theory of instruction. The initial strength of military efforts is dependent on the energy and enthusiasm of a few dedicated people who tend to develop experimental programs individually. As acceptance grows, the tendency seems to be toward the establishment of cadres of in-service programers. There is a growing interest in computer-assisted instruction, especially in France, Germany, and the United Kingdom. If this materializes, it will lean heavily on programs made in the United States. For straight programed instruction, however, European efforts are standing alone. (aj)

AC 001 649 E DIFFERENTIALLY STRUCTURED INTRODUCTORY LEARNING MATERIALS AND LEARNING TASKS. Grotelueschen, Arden. Columbia Univ., New York. Teachers College. BR-6-2447 U.S. Office of Education. Bureau of Research. OCT 67 OEG-1-7-002447/20
EDRS PRICE MF-$1.00 HC-$10.04 251p.
TERMS: *adult learning, *number concepts, *intelligence level, *paired associate learning, *sequential approach, learning theories,

ABSTRACT: An attempt was made to assess the effects on adult learning of differentially structured introductory cognitive learning tasks and materials, and the interaction of intelligence with the experimentally manipulated material and task categories. About 96 adults who were unfamiliar with the concept of number bases were classified according to a 4x3x4 factorial design. During individual sessions, the learner, classified by intelligence level, was given a programed booklet on one of four structural learning materials randomly assigned. Upon completion, the learner was given a learning task, by teaching machine, under an experimental condition consisting of three differentially sequenced sets of paired associates, corresponding to numbers in the base four number system. The number of trials required, total errors, and posttest scores served as measures of the effectiveness of the experimental conditions. Intelligence was positively related to task performance, complete task sequencing led to more rapid learning than did partial sequencing, introductory materials were especially useful with the more intelligent adults, completely sequenced learning tasks were evidently most beneficial with the less intelligent adults, and men consistently outperformed women, particularly in applying number base principles. (ly)
SECONDARY TERMS: number systems, teaching machines, intelligence, programed instruction, programed texts, task performance, sex differences, effective teaching, textbook content, mathematics, sequential learning, cognitive processes, time factors (learning),

AC 001 080 C HOW AND WHY PEOPLE LEARN, AN EXPERIMENT IN PROGRAMMED INSTRUCTION, AN EXPLANATION OF LEARNING PRINCIPLES FOR LEADERS OF ADULT GROUPS. (3d edition). Waite, Naida. Canadian Association for Adult Education, Toronto. 69p.

TERMS: *learning processes, *adult learning, *retention, *study skills, rote learning, thought processes, learning motivation,

ABSTRACT: Reports of research experiments and studies as well as experiences of teachers and trainers formed the basis for this programed text on the learning process, with special reference to adult education. The four parts--(1) motivation, (2) perceiving, attending, observing, (3) remembering, forgetting, principles of learning, and (4) miscellaneous facts and ideas about learning--are arranged in a self-correcting workbook fashion. Three final tests with answers are given. (sg)

AC 001 436 E MANAGING THE INSTRUCTIONAL PROGRAMMING EFFORT. Rummler, Geary A.,ed. * and others, eds. Michigan Univ., Ann Arbor. Bureau of Industrial Relations. 67 DOCUMENT NOT AVAILABLE FROM EDRS 293p.

TERMS: *programed instruction, *program administration, *management development, *training techniques, *programed materials, selection,

ABSTRACT: The compendium of case histories on the development of programed instructional materials describes attempts by graduates of a programing workshop to solve management development problems in their own organizations. Areas of discussion are--behavioral technology and manpower development, the programing process, contract (custom-made) programs, published programs, inplant programing, means of introducing programs into the field, approaches to program administration in the field, development of a project by the American Bankers Association, and major variables to be considered in choosing a program source. The outcomes, both successful and unsuccessful, of these efforts suggest that the major causes of programing failures are administrative or managerial rather than technical. (The document includes chapter abstracts and references, charts and figures, and appendixes on management presentations, problem analysis, cost reduction and control, and sources of basic information on programed learning.) (This document is available from the Bureau of Industrial Relations, Graduate School of Business Administration, University of Michigan, Ann Arbor.) (1y)

SECONDARY TERMS: program descriptions, surveys, behavior change, reinforcement, program evaluation, evaluation techniques, training objectives, teaching machines, criteria, business, industry, instructional staff, case studies (education), time factors (learning), program costs, banking, American Bankers Association,

AC 000 715 C ASPECTS OF EDUCATIONAL TECHNOLOGY (Proceedings of the Programed Learning Conference, Loughborough, England, Apr 15-18, 1966). Unwin, Derick, ed. * Leedham, John, ed. 67 517p.

TERMS: *instructional technology, *teaching techniques, *programed instruction, *evaluation, *computer assisted instruction, Great Britain,

ABSTRACT: This document, contains 43 papers representing an overview of theory and of existing and proposed studies relating to educational technology. Several of these papers have been analyzed separately. (Publ. by Methen & Co. Ltd., London) (1y)

AC 000 668FI THE DESIGN OF INSTRUCTIONAL SYSTEMS. Smith, Robert G. George Washington Univ., Washington. HumRRO. TR-66-18. U.S. Dept. of the Army. Office, Chief of Research and Development. DA 44-188-ARO-2. Proj 2J024701A712 01. Nov 66 87p.

TERMS: *instructional design, *program planning, *system approach, *transfer of training, reinforcement, feedback, training techniques, training objectives,

ABSTRACT: The present study, part of a series on training technology, is based on an extensive survey of recent literature. It describes and discusses a systems approach to designing training and considers factors bearing on training effectiveness, especially on transfer of training. An effective instructional system is conceived as one in which components form an integrated whole, achieving maximum results at minimum cost. Such components include presentation media, audiovisual aids, programed instruction, computer assisted instruction, management of students (chiefly motivation and reinforcement), techniques for practicing knowledge and performance, the knowledge of results, useful means of guiding student activities toward training goals, lesson planning, and program testing and evaluation. Document includes 153 references, a checklist for evaluating training, and figures (index of program complexity, model of an instructional system, lesson function charts for simple and complex tasks). (This document, AD 644054, is available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151. Microfiche 65¢. Hardcopy $3.00)(author/ly)

SECONDARY TERMS: performance factors, task performance, audiovisual aids, programed instruction, computer assisted instruction, motivation, classroom techniques, program descriptions, benefit cost ratio, effective teaching,

AC 001 261 I PROGRAMMED LEARNING. U.S. Dept. of the Air Force, Washington. Manual 50-1. 13 Jan 67 50p.

TERMS: *programed instruction, *instructional technology, instructional design, autoinstructional methods, administrative policy, adult learning, programing, evaluation, instructional materials, programing problems, programed texts, programs,

ABSTRACT: The manual establishes the policy and serves as a guide for the application of programed learning in Air Force instructional systems. It explains the basic characteristics, concepts, and techniques of programed learning and programed instruction and applies to educational and training personnel who prepare or administer programed instructional materials. It includes frames illustrating linear programing, examples of prompts, right answer and wrong answer pages, and typical sequence of discrimination frames. This document includes 32 references and 52 defined terms and is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401 (author/pt)

AC 000 719 C (SEE AC 000 715 C) THE WRITING, VALIDATION AND PRODUCTION OF A SCIENCE PROGRAMME TO A PREDETERMINED TIME-SCALE BY A TEAM AT THE RAF. SCHOOL OF EDUCATION (IN ASPECTS OF EDUCATIONAL TECHNOLOGY, proceedings of the Programed Learning Conference, Loughborough, England, Apr 15-18, 1966/181-188). Cartmell, A.E. 67 8p.
TERMS: *programed instruction, *science instruction,

AC 000 4383C CURRENTLY AVAILABLE COMMERCIAL COURSES, WORKSHOPS, AND SEMINARS IN PROGRAMMED INSTRUCTION (IN NSPI journal, 6(4)/8-11, Apr 67). Tracey, William R. 6p.
TERMS: *program descriptions, *programed instruction,

ABSTRACT: A survey of 33 commercial concerns showed that some programer training is currently available from at least 12 firms which together offer 21 different courses--six orientation, 11 basic, and four advanced. They vary widely in length and in cost. No single vendor has included all of the customary steps in the design, development, and validation of instructional systems in either the statement of objectives or in the outli of course content.(aj)

AC 001 272 E MATERIALS FOR THE ADULT BASIC EDUCATION ADMINISTRATOR AND TEACHER, BIBLIOGRAPHY. National University Extension Association, Washington.
ED 012 425 U.S. Office of Education. Division of Adult Education. JUN 67 OEG2-6-061894-1894
EDRS PRICE MF-$0.09 HC-$2.24 56p.
TERMS: *adult basic education, *programed instruction, *instructional technology, *bibliographies, *information sources, teaching

ABSTRACT: Psychological studies consistently testify to the fact that the adult learner reacts favorably to material which enables him to progress at his own speed. He does not want to revert to the child-oriented classroom because, for many, this atmosphere produced failure. For this reason, programed learning and its related field of educational technology are stressed in this selected bibliography of materials suitable for use by administrators and teachers of adult basic education programs. Subjects covered are programed instruction, educational technology, administration, teaching methods and materials, understanding the adult basic education student, and testing and counseling. Many of the publications were used successfully in 1966 ABE Training Program. (author/aj)
SECONDARY TERMS: methods, counseling, testing, administration, audiovisual aids, films, literacy, literacy education, instructional materials,

AC 001 454 E DEVELOPMENT OF A PROGRAMMED TEXT IN SALESMANSHIP FOR FEASIBILITY TESTING IN ADULT EDUCATION. Final report. Russell, Raymond B. Kansas State Teachers Coll., Emporia. Dept. of Bus. and Bus. Educ. BR-5-8267
OEG-5-8267-232 EDRS PRICE MF-$0.09 HC-$1.00 25p.
TERMS: *programed texts, *programed instruction, *salesmanship, *rural extension, *evaluation, feasibility studies, rural areas,

ABSTRACT: The objectives of this project were to develop a programed text of about 1,200 frames in salesmanship for use in distributive education adult classes in small towns and to evaluate the possibilities of continuing this type of program without further federal financing. Promotion of the text was carried on in ten Kansas towns with populations between 2,000 and 7,000. Six communities adopted the program and there was a total enrollment of 267 (with 241 completions). The text, initially consisting of six chapters with 1,075 frames, was field tested on 15 students for clarity and conciseness, and then was reviewed for pertinency of information by an advisory committee of local business leaders. The program had to conform to an I. Q. range of 70-140, an age span of 20 to 50, and a median grade completion level of about 10 years. The enrollments and the high rate of course completion suggest that adults in smaller communities will accept programed instruction in salesmanship, and the relatively low cost per man-hour of instruction (58¢) indicates that programed instruction is more efficient, at least in financial terms, than traditional college extension. (The document includes brief recommendations, publicity and promotion arrangements, and enrollment reports.) (ly)
SECONDARY TERMS: enrollment, attendance, program costs, student costs, class size, distributive education, Kansas,

AC 001 181FI PROGRAMMED INSTRUCTION AND TEACHING MACHINES IN THE FIELD OF MEDICAL EDUCATION, AN ANNOTATED BIBLIOGRAPHY. Reynolds, Laura A. Research Analysis Corporation, McLean, Va. R-RAC-TP-235. Nov 66 20p.

TERMS: *programed instruction, *teaching machines, *autoinstructional methods, *medicine, *annotated bibliographies, research, inservice education, on the job training, medical continuing education, computer assisted instruction, simulation, research tools, feedback.

ABSTRACT: This bibliography, compiled largely from "Index Medicus" and spanning the period 1960 to May 1966, contains a selected list of 65 articles, reports, and author abstracts on programed instruction and teaching machines in the field of medicine; with a particular effort to include papers on the use of computers. A short list of books on programed instruction and teaching machines is included. (This document is available from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151. Microfiche 65¢. Hardcopy $3.00.) (author/ly)

AC 000 717 C (SEE AC 000 715 C) THE PREPARATION OF A PROGRAM TO TRAIN BOILER OPERATORS (IN ASPECTS OF EDUCATIONAL TECHNOLOGY, Proceedings of the Programed Learning Conference, Loughborough, England, Apr 15-18, pp. 151-157). Pollock, John M. 67 9p.

TERMS: *programed instruction, *program description, *operating engineering,

ABSTRACT: This paper describes the first of two experimental programs for unit operators of a boiler. The first program on the boiler in operation proved that it is possible to write a program for unit operators, and that it will be acceptable to them.

AC 000 636 C SALESMANSHIP, A PROGRAMMED TEXT. Kansas State Teachers College, Emporia. 65 303p.

TERMS: *programed instruction, *programed texts, *salesmanship, Kansas State Teachers College,

ABSTRACT: This manual presents a retail selling program in the form of programed learning. It covers customer approach, customer motivation, handling customer objections, suggestion selling, closing the sale, product knowledge,and a summary.

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